37140

I. BACKGROUND

The residences under consideration for the air monitoring effort in New Vernon, NJ are homes which may possibly have been contaminated from asbestos containing fill material brought to the New Vernon Road and Whitebridge Road locations.

II. SAMPLING PLAN

The purpose of this sampling effort is to provide data for ATSDR and EPA to asses the risk associated with the living conditions at the aforementioned residences.

A. Sampling Locations

Per residence, 2-3 sampling locations will be selected in the most heavily occupied rooms with a contingecy plan selecting up to five rooms should such efforts be required to accurately assess the area. Locations will be dependant upon resident information as well as professional judgment. Consideration will be given to occupancy, volume of travel through the area which may entrain any fibers into the air pathway, as well as access areas which may have potentially higher fiber contamination due to outdoor to indoor tracking of ACM (Asbestos Containing Material) debris by physical means.

Consideration will also be given with respect to the layout of the house, for example, ranch versus split level.

B. Aggressive vs. Nonaggressive

Aggressive sampling will be conducted in homes which have agreed to vacate the premises for a time period adequate enough for sample results to be obtained indicating that reoccupancy will pose no threat from the fibers entrained into the air from the aggressive effort. The aggressive measure will simulate normal household activities which may possibly entrain any fibers present into the air pathway.

Nonaggressive sampling will occur in homes where occupants chose to remain during the sampling period. Their normal activities would provide the intrusive activity which may entrain any fibers present into the air pathway.

C. Number and Duration of Samples

At each location, one medium volume Gilian AIRCON 520 pump will operate at a flow rate of approximately 12 liters per minute for approximately 14 hours to achieve a total sample volume of 10,000 liters recommended for risk level detection limits. Background will be obtained from at least one and up to three residence chosen by Region II EPA in consultation with ATSDR or area ambient asbestos information acquired from the State of New Jersey.

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D. Sampling Methodology and Procedure

Each sampler will be equipped with a 25mm, 0.45 micron cellulose ester fiber filter with 50 mm extension cowl as specified in NIOSH method 7402: Asbestos Fibers. Pumps will draw a flow rate of approximately 12 liters per minute for a 14 hour period totaling 10,000 liters in volume.

Aggressive and nonaggressive procedures will be instituted as sampling requirements warrant.

Each sampler will be pre and post sampling calibrated with a representative sampler in line using a rotameter which in turn has been calibrated by a Gilian Gilibrator Soap Bubble Calibration System to 12 liters per minute. Both flows will be recorded and the average will serve as the sample flow rate.

Analysis will follow NIOSH method 7402 for Asbestos Fibers utilizing Transmission Electron Microscopy. The lab will be instructed to analyze to a detection limit of 0.01 fiber/cc as discussed by EPA and ATSDR or another limit if one has been selected. The lab will also be instructed to perform two counts. The first will analyze for the criteria outlined by ATSDR representatives per the October 2, 1990 conference call. Those criteria are fiber/cc volume, fiber length greater than or equal to 5 microns, fiber diameter and fiber type. A second count will be requested which will include ALL identifiable asbestos fibers.

Field datasheets will be used to collect all data relevant to the air sampling effort. Specifically:

- o The date and personnel visiting the site
- o Name and address of the residence
- o Location of the samplers
- o Pre and Post flow rates
- o Start and stop times
- o Aggressive or nonaggressive sampling
- o Additional information as pertains

Chain of custody forms will be executed at the time of filter removal and will accompany filters to the lab.

Appropriate field and lot blanks will be submitted for the sampling effort.

Analysis will be performed by an American Industrial Hygiene Accredited Laboratory with experience in Asbestos in air.

cc: Millington Asbestos

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Table 1.1 Results of the Asbestos Analysis
for Millington Asbestos Dump Site
Project # 3426

Sample ID	Location	Volume (Liters)	Type of Asbestos Detected	# of Structures detected**		Concentration of Asbestos Structures Detected		Mass	Mass >5*
				Asb	NonAsb	AFP/cc	AFP/cc >5*	ng/m3	ng/m3
04841	Bedroom	8746.20	ND	0	2	0.0004 DL	0.0000	0.0000	0.0000
04843	Basement	8765.00	ND	0	6	0.0004 DL	0.0000	0.0000	0.0000
04844	Family Room	7431.25	ND	0	828	0.0004 DL	0.0000	0.0000	0.0000
04845	Lot Blank	----	ND	0	0	0.0032 DL	0.0000	0.0003 M	0.0000
04846	Field Blank	----	ND	0	0	0.0032 DL	0.0000	0.0003 M	0.0000
04831	Upstairs Family Room	8773.75	ND	0	11	0.0004 DL	0.0000	0.0000	0.0000
04833	Upstairs Family Room CBZ	8771.25	ND	0	3	0.0004 DL	0.0000	0.0000	0.0000
04835	Downstairs Family Room	8850.00	ND	0	2	0.0004 DL	0.0000	0.0000	0.0000
04837	Master Bedroom	8776.25	ND	0	75	0.0004 DL	0.0000	0.0000	0.0000
04832	Field Blank	----	ND	0	0	0.0032 DL	0.0000	0.0003 M	0.0000
04834	Lot Blank	----	ND	0	0	0.0032 DL	0.0000	0.0003 M	0.0000
04861	Resid #1/Kitchen 4'	10184.10	Chr Act	5	36	0.0032	0.0013	4.3678	4.2982
04869	Resid #1/Kitchen 4'	10199.00	Chr Act	5	38	0.0031	0.0006	0.4436	0.0000
04867	Resid #1/Kitchen	10220.10	Chr	2	56	0.0009	0.0004	0.0346	0.0000
04868	Resid #1/Baby Rm	10338.80	Chr	1	137	0.0004	0.0004	0.1009	0.0000
04870	Resid #1/Bedroom	10416.30	Chr	2	52	0.0012	0.0006	9.4349	9.4345
04862	Resid #2/LR	10011.60	Chr	2	36	0.0013	0.0006	0.0540	0.0000
04851	Resid #2/LR	10510.50	Chr	5	58	0.0031	0.0006	0.3474	0.0000
04852	Resid #2/BR	10368.80	Chr Act	3	35	0.0019	0.0006	3.4865	3.2808
04853	Resid #2/Den	10313.80	Chr Act	2	36	0.0012	0.0006	5.6912	5.4971
04866	Field Blank #1	----	ND	0	1	0.0032 DL	0.0000	0.0003 M	0.0000
04864	Field Blank #2	----	ND	0	0	0.0032 DL	0.0000	0.0003 M	0.0000
04865	Lot Blank	----	ND	0	0	0.0032 DL	0.0000	0.0003 M	0.0000
04971	#1, Baby Rm	10136.3	Chr	1	7	0.0006	0.0006	0.0658	0.0000
04972	#1, Bedroom	10125.0	ND	0	27	0.0003	0.0000	0.0000	0.0000
04973	#1, K./Liv. Rm	9967.8	Chr	3	17	0.0019 DL	0.0006	0.2803	0.1883
04974	#1, K./Liv. Rm	9988.7	Chr	1	11	0.0005	0.0005	0.0252	0.0000
04975	#1, K./Liv. Rm	10003.4	Chr	1	42	0.0006	0.0006	0.0250	0.0000
04976	#2, Bedroom	10053.9	ND	0	161	0.0003 DL	0.0000	0.0000	0.0000
04977	#2, Den	10110.0	Chr	2	108	0.0013	0.0006	0.5456	0.5184
04978	#2, LR	10126.3	Chr	1	69	0.0005	0.0005	0.0498	0.0498
04979	#2, LR	10130	Chr	1	35	0.0006	0.0006	0.5174	0.5174
04980	Lot Blank	----	ND	0	0	0.0032	0.0000	0.0003 M	0.0000
04981	FB 1	----	ND	0	0	0.0032	0.0000	0.0003 M	0.0000
04982	FB 2	----	ND	0	0	0.0032	0.0000	0.0003 M	0.0000

AFP denotes Asbestos Fibrous Particles
ND denotes Not Detected
Chr denotes Chrysotile
Act denotes Actinolite
* Asbestos structures greater than 5 micron in length
** Asb denotes Asbestos
** NonAsb denotes Non Asbestos
DL for blanks, number of AFP in millions of fibers/filter otherwise AFP/cc for ND results

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PROCEDURE FOR ASBESTOS

The procedure of G. Yamate, S. C. Agarwal and R. D. Gibbons given in "Methodology for the Measurement of Airborne Asbestos by Electron Microscopy", draft report 1984, Washington, DC; Office of Research and Development, USEPA, Contract # 68-02-3266 was followed.

The samples were prepared by first coating them with a thin layer of carbon, then examining a 3mm x 3mm square by TEM at 20000 power. The samples were examined by morphological observation, selected area electron diffraction and energy dispersive X-ray analysis. USEPA level II protocol was followed in analysing the samples.